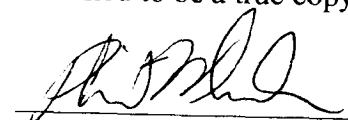


AMENDMENT ONE TO THE
MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DEPARTMENT OF DEFENSE
OF THE UNITED STATES OF AMERICA
AND
THE DEPARTMENT OF DEFENCE
OF AUSTRALIA
FOR THE
COOPERATIVE DEVELOPMENT, PRODUCTION, AND SUPPORT OF THE COMBAT
CONTROL SYSTEM AN/BYG-1 TACTICAL SUBSYSTEM

Certified to be a true copy:



Phil Wheeler
International Agreements Negotiator
Navy International Programs Office

INTRODUCTION

The Department of Defense of the United States of America (U.S. DoD) and the Department of Defence of Australia (Australian DoD), hereinafter referred to as the "Participants":

Considering the Memorandum of Understanding between the Department of Defense of the United States of America and the Department of Defence of Australia for the Cooperative Development, Production, and Support of the Combat Control System AN/BYG-1 Tactical Subsystem, which entered into effect November 18, 2004 (AN/BYG-1 MOU);

Recognizing the Exchange of Notes Constituting an Agreement between the Government of the United States of America and the Government of Australia Concerning Certain Mutual Defence Commitments done at Sydney on December 1, 1995 (the Chapeau Agreement), as may be amended, applies to the AN/BYG-1 MOU and will apply to this Amendment;

Having a common interest in defense;

Recognizing the intent of the Statement of Principles for Enhanced Cooperation between the United States Navy and the Royal Australian Navy in matters relating to Submarines dated May 2, 2005 to facilitate defense cooperation activities;

Having a mutual need for the continuing development, production, and support of the AN/BYG-1 Tactical and Weapon Control System;

Recognizing the impact of the Submarine Warfare Federated Tactical System on AN/BYG-1;

Having realized significant benefits from the AN/BYG-1 MOU;

Have reached the following understandings:

SECTION I PURPOSE

The purpose of this Amendment is to extend the duration of the AN/BYG-1 MOU, revise export control provisions, provide additional funding, and revise Project management responsibilities.

SECTION II
AMENDMENT

The AN/BYG-1 MOU is amended as follows:

1. Replace the current title page with the following title page.

"MEMORANDUM OF UNDERSTANDING

BETWEEN

THE DEPARTMENT OF DEFENSE

OF THE UNITED STATES OF AMERICA

AND

THE DEPARTMENT OF DEFENCE

OF AUSTRALIA

FOR THE

COOPERATIVE DEVELOPMENT, PRODUCTION, AND SUPPORT OF THE

AN/BYG-1 TACTICAL AND WEAPON CONTROL SYSTEM"

2. Revise Section I (Definitions) by adding the following definitions either as new definitions or as replacements for the existing definition of the same name:

"Advanced Processing Build Process (APB Process)	The APB Process is the cyclic process by which capability improvements are conceived, developed, tested, and produced. The purpose of the APB Process is to produce hardware-independent software builds to create or improve functionality for transition to naval combat systems programs. There is both an advanced development and production component to the
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	overall APB Process.
PEO-IWS 5 (Program Executive Officer - Integrated Warfare Systems)	The United States Department of the Navy (USN) organization that manages the technology improvements from the various sources as they transit through the APB Process until they transition to production.
Principal Systems Engineering Integrated Product Team (PSE IPT)	The team that coordinates the APB and modernization process.
Production	In addition to producing hardware, production is the process by which the APB baseline transitions from a temporary configuration to a formally engineered and tested system that is certified within the naval environment and supported with a logistics package.
Production Enhancements	Those selected engineering changes that are incorporated to the software baselines during production.
Project	The U.S. DoD-Australian DoD cooperative engineering and manufacturing project to develop, produce, and support the AN/BYG-1 Tactical and Weapon Control System as described in this MOU, as amended.
Project Management Plan	A plan developed by the Project Manager that provides a description of the Project's management, risks, schedule, delivery requirements, and milestones.
Project Test and Evaluation Master Plan (PTEMP)	The documents developed to delineate Project test requirements, goals, and schedules to meet the national requirements of both

	Participants.
Prospective Contractor	Any entity that seeks to enter into a Contract to be awarded by a Participant's Contracting Agency and that, in the case of a solicitation involving the release of export-controlled information, is eligible to receive such information.
Submarine Warfare Federated Tactical System (SWFTS)	Coalition of the submarine combat systems program offices, including PEO-IWS 5, to coordinate upgrades and facilitate common technical standards and principles across systems. In addition to AN/BYG-1, SWFTS includes systems such as sonar, electronic support measures, imaging, navigation, and communications."

Revise Section I (Definitions) by deleting the following definition:

"Tactical Control Development Working Group (TCDWG)	The TCDWG is responsible for the overall coordination of the Tactical Control APB Process."
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3. Revise Section II (Objectives) by deleting paragraphs 2.1.1. through 2.1.6. and replacing them with the following:

- "2.1.1. To identify and implement changes that will improve and maintain the military effectiveness, safety, and availability of the AN/BYG-1 Tactical and Weapon Control System for both Participants.
- 2.1.2. To design, develop, and test through the Advanced Processing Build (APB) and Technical Insertions (TI) Processes AN/BYG-1 Tactical and Weapon Control system upgrades meeting the requirements of the Participants.

- 2.1.3. To produce AN/BYG-1 Tactical and Weapon Control System TI upgrades, APB software upgrades, and production enhancements and install, test, and certify them in the AN/BYG-1 Tactical and Weapon Control Systems on the Participants' submarines.
- 2.1.4. To provide in-service support of the Participants' AN/BYG-1 Tactical and Weapon Control Systems including maintenance builds, obsolescence management, and the upgrading of the Participants' maintenance, development, analysis, and training infrastructures.
- 2.1.5. To provide program and engineering management of the processes during the development, production, and support phases to control all aspects of risk, cost, and schedule of AN/BYG-1 Tactical and Weapon Control Systems.
- 2.1.6. To maintain configuration management between the U.S. DoD and the Australian DoD AN/BYG-1 Tactical and Weapon Control Systems through Australian DoD participation in the APB and Production process.
- 2.1.7. To accommodate and support, to the maximum extent possible, any future Australian DoD and/or U.S. DoD requirements for logistics/resupply, support, configuration control, operation, training, training facilities, combat systems research and development, future upgrades, and mutual use of facilities for the AN/BYG-1 Tactical and Weapons Control System.
- 2.1.8. To maximize commonality of product and process and limit unique effort in developing, producing and supporting the AN/BYG-1 Tactical and Weapons Control System."

4. Revise Section III (Scope of Work) by deleting paragraphs 3.1.1. through 3.1.7. of Section III (Scope of Work) of the MOU and replacing them with the following:

- "3.1.1. Development of AN/BYG-1 Tactical and Weapons Control System upgrades through the APB, TI, and Production processes to provide improved combat system effectiveness in an increasingly difficult submarine threat environment. The APB process provides new or improved capability

based on advanced development. Hardware modifications via the TI process will control obsolescence and improve processing to support software enhancements.

- 3.1.2. Project management of AN/BYG-1 Tactical and Weapons Control System development, production, and support including program planning, scheduling, Contracting, financial management, and risk management.
- 3.1.3. Engineering management including requirements definition and management, system design and architecture, configuration management, integration and test, safety, and certification.
- 3.1.4. Testing of the hardware and software upgrades at the component, subsystem, and system level. Following an APB software upgrade or TI installation, as appropriate, extensive at-sea testing may be conducted at both U.S. DoD and Australian DoD ranges and littoral environments. Testing will be performed in accordance with each Participant's test and evaluation plans and Annex D (Project Overview). Plans and testing will be coordinated and results shared between Participants to the maximum extent possible.
- 3.1.5. Production and installation, as necessary, of hardware modifications through TIs to upgrade U.S. DoD and Australian DoD submarines to the latest AN/BYG-1 Tactical and Weapon Control System. This includes unique Australian maintenance improvements to AN/BYG-1 targeting capability provided by the COLLINS Towed Array Processor (CTAP).
- 3.1.6. Development, establishment, modification, and maintenance of the development, analysis, and training support infrastructures of both Participants.
- 3.1.7. Supporting logistics and sparing requirements and performance of obsolescence and sustainability management.
- 3.1.8. Sharing Project Information relating to the development, production, and support of the AN/BYG-1 Tactical and Weapon Control System and related support and training infrastructures. This includes technical information and data on

systems that interface to AN/BYG-1 and provide critical data in support of Tactical and Weapons Control functionality."

5. Revise Section IV (Management (Organization and Responsibility)) as follows:

(a) Delete paragraph 4.1. and replace it with the following:

"4.1. This Project will be directed and administered on behalf of the Participants by an organization consisting of an Executive Steering Committee (SC), and a Joint Project Office (JPO) headed by a Project Manager (PM). The SC will have overall authority over the PM, in accordance with this MOU. The PM will have primary responsibility for effective implementation, efficient management, and direction of the Project in accordance with this MOU. The Principal Systems Engineering Integrated Product Team (PSE IPT) supports the SC and PM by providing coordination of the APB Process."

(b) Delete paragraph 4.3.2. and replace it with the following:

"4.3.2. Reviewing progress in meeting system requirements and overall progress of the Project as specified in the PMP and Annex D (Project Overview).

(c) Delete paragraph 4.3.12. and replace it with the following:

"4.3.12. Reviewing and approving the semi-annual status report presented by the PM at the SC meeting."

(d) Delete paragraph 4.3.13. and replace it with the following:

"4.3.13. Reviewing and approving the FMPD and the PMP (including any changes), and reviewing and endorsing the Participants' Project Test and Evaluation Master Plans (PTEMPs) (including any changes)."

(e) Add the following new paragraphs:

"4.3.15. Employing its best efforts to resolve, in

consultation with the export control authorities of the Participant concerned, any export control issues raised by the PM in accordance with subparagraph 4.6.20. of this Section or raised by a Participant's SC representative in accordance with subparagraph 8.1.1.3. of Section VIII (Disclosure and Use of Project Information) of this MOU.

4.3.16. Reviewing and providing guidance with respect to AN/BYG-1 architecture or functionality changes referred by the JPO."

(f) Delete paragraphs 4.4. and 4.5. and replace them with the following:

"4.4. The intent is for the JPO to be collocated with the AN/BYG-1 Program Office. The Department of the Navy within the U.S. DoD will appoint the PM who, as head of the JPO, will be responsible for implementing this MOU and for day-to-day management of the Project.

4.5. The Participants will each provide national representation to the JPO to manage the Project, including appropriate JPO support to PEO-IWS 5 APB related activities. In accordance with Annex A (Project Management Organization Diagram), the Australian DoD will appoint a DPM and the U.S. DoD will appoint a PM and an Assistant PM (APM). The DPM will report to the PM heading the JPO and the APM will report to the DPM."

(g) Delete paragraphs 4.6.10. through 4.6.12. and replace with the following:

"4.6.10. Developing and forwarding the PTEMPS to the SC for review and endorsement (including any proposed changes), and implementing the PTEMPS.

4.6.11. Developing, approving, and executing the engineering management plan.

4.6.12. Assessing information and recommendations provided by the PSE IPT and presenting to the SC for guidance proposed changes to architecture or functionality of AN/BYG-1 Tactical and Weapons Control System that would have the effect of increasing a

Participant's unique contribution to maintain the functionality or effectiveness of its system.

(h) Add the following new paragraph:

"4.6.20. Monitoring export control arrangements required to implement this MOU and, if applicable, referring immediately to the SC any export control issues that could adversely affect the implementation of this MOU."

(i) Delete the first sentence of paragraph 4.8. and replace it with the following:

"4.8. Representatives from both the U.S. DoD and Australian DOD will participate in the STRG, Tactical Control Support Group (TCSG), peer review working groups, support groups, in-process teams, the PEO-IWS 5 APB Process, and other working groups that help define the requirements and direction of future improvements to the AN/BYG-1 Tactical and Weapons Control System."

(j) Insert a new paragraph 4.9.:

"4.9. The Principal Systems Engineering Integrated Product Team (IPT) is responsible to PEO SUB to coordinate activities related to the APB and modernization process to ensure alignment across the enterprise. The PSE IPT is comprised of chief engineers from participating program offices, PEO-IWS 5, and SWFTS. The AN/BYG-1 chief engineer and the PM represent the interests of the JPO. The PSE IPT reviews requirements, system improvements and changes, functional allocation, and architecture, and provides coordination during the development and test process. The PSE IPT operates on a basis of consensus decision making to coordinate the APB and modernization process. The PSE IPT will consider all variants of BYG-1 and, as a key objective, will limit unique changes to the configurations of both Participants."

6. Revise Section V (Financial Provisions) as follows:

(a) Delete paragraph 5.1. and replace it with the following:

"5.1. The Participants estimate that the performance of the shared responsibilities under this MOU will not cost more than a Financial Cost Ceiling of \$560.127 million Then Year (TY) U.S. dollars. A Financial Cost Ceiling may be changed only upon the written consent of the Participants. The U.S. dollar will be the reference currency for the Project, and the Project fiscal years will be based on the U.S. fiscal year."

(b) Delete paragraph 5.3. and replace it with the following:

"5.3. The shared Financial Cost Ceilings and non-financial contributions for the Project are as follows:

U.S. DoD Financial \$476.108 million TY U.S.

Australian DoD Financial \$84.019 million TY U.S.

Total Financial Shared \$560.127 million TY U.S.

(The ratio of shared financial contributions is 85:15,
U.S. DoD:Australian DoD)

U.S. DoD Non-financial \$16.460 million TY U.S.

Australian Non-financial \$8.360 million TY U.S.

Total Non-Financial Shared \$24.820 million TY U.S."

7. Revise Section VI (Contracting Provisions) as follows:

(a) Delete the second sentence of paragraph 6.3. and replace it with the following:

"The Contracting Officer will insert into prospective Contracts (and require its Contractors to insert in subcontracts) provisions to satisfy the requirements of this MOU, including Section VIII (Disclosure and Use of Project Information), Section IX (Controlled Unclassified Information), Section XI (Security), Section XII (Third Party Sales and Transfers), and Section XVIII (Amendment, Termination, Entry into Effect, and Duration) of this MOU, including the export control provisions in accordance with this MOU, in particular paragraph 6.5. of this Section."

(b) Delete paragraph 6.5. and replace it with the following:

"6.5. Each Participant will legally bind its Contractors to a requirement that the Contractor will not retransfer or otherwise use export-controlled information furnished by the other Participant for any purpose other than the purposes authorized under this MOU. The Contractor will also be legally bound not to retransfer the export-controlled information to another Contractor or subcontractor unless that Contractor or subcontractor has been legally bound to limit use of the information to the purposes authorized under this MOU. Export-controlled information furnished by one Participant under this MOU may only be retransferred by the other Participant to its Contractors if the legal arrangements required by this paragraph have been established. Each Participant will legally bind its Prospective Contractors to a requirement that the Prospective Contractor will not retransfer or otherwise use export-controlled information furnished by the other Participant for any purpose other than responding to a solicitation issued in furtherance of the purposes authorized under this MOU. Prospective Contractors will not be authorized use for any other purpose if they are not awarded a Contract. The Prospective Contractors will also be legally bound not to retransfer the export-controlled information to a prospective subcontractor unless that prospective subcontractor has been legally bound to limit use of the export-controlled information for the purpose of responding to the solicitation. Export-controlled information furnished by one Participant under this MOU may only be retransferred by the other Participant to its Prospective Contractors if the legal arrangements required by this paragraph have been established. Upon request by the furnishing Participant, the receiving Participant will identify its Prospective Contractors and prospective subcontractors receiving such export-controlled information."

8. Revise Section VIII (Disclosure and Use of Project Information) as follows:

(a) Add the following paragraphs at the end of the second paragraph of 8.1.:

"8.1.1. The following export control provisions will apply to the transfer of Project Information:

8.1.1.1. Unless otherwise restricted by duly authorized officials of the furnishing Participant at the time of transfer to the other Participant, all export-controlled information furnished by one Participant to the other Participant may be retransferred to the other Participant's Contractors, subcontractors, Prospective Contractors, and prospective subcontractors, subject to the requirements of paragraph 6.5. of Section VI (Contracting Provisions) of this MOU.

8.1.1.2. Export-controlled information may be furnished by Contractors, subcontractors, Prospective Contractors, and prospective subcontractors of one Participant's nation to the Contractors, subcontractors, Prospective Contractors, and prospective subcontractors of the other Participant's nation pursuant to this MOU, subject to the conditions established in licenses or other approvals issued by the Government of the former Participant in accordance with its applicable export control laws and regulations.

8.1.1.3. If a Participant finds it necessary to exercise a restriction on the retransfer of export-controlled information as set out in subparagraph 8.1.1.1. of this Section, it will promptly inform the other Participant. If a restriction is then exercised and the affected Participant objects, that Participant's SC representative will notify promptly the other Participant's SC representative and they will immediately consult in order to discuss ways to resolve such issues or mitigate any adverse effects."

(b) In paragraph 8.7.1., delete the phrase "Contractor or other entity" and add in its place the following:
"Contractor, Participant, or other entity".

9. Revise Section IX (Controlled Unclassified Information) by deleting paragraph 9.2. and replacing it with the following:

"9.2. To assist in providing the appropriate controls, the originating Participant will ensure that Controlled Unclassified Information is appropriately marked to ensure its "in confidence" nature. The Participants' export-controlled information will be marked in

accordance with the applicable Participant's export control markings as documented in the security Classification Guide. The Participants will also decide, in advance and in writing, on the markings to be placed on any other types of Controlled Unclassified Information and describe such markings in the PSI."

10. Revise Section XI (Security) by deleting paragraph 11.5. and replacing it with the following:

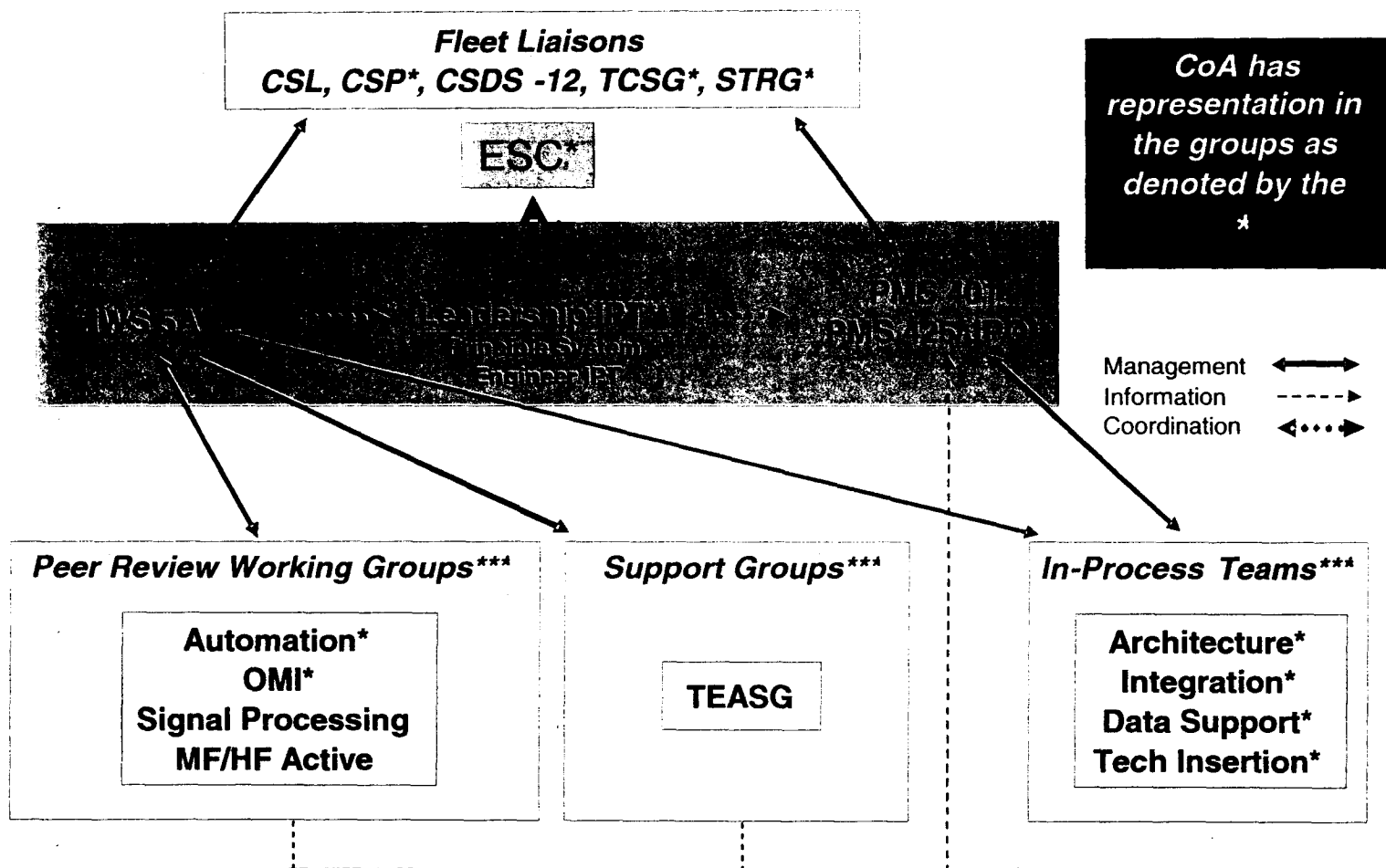
"11.5. The PM will prepare a Project Security Instruction (PSI) and a Classification Guide (CG) for the Project. The PSI and the CG will describe the methods by which Project Information will be classified, marked, used, transmitted, and safeguarded, and will require that markings for all export-controlled Classified Information will include the applicable export control markings identified in the PSI in accordance with paragraph 9.2. of Section IX (Controlled Unclassified Information) of this MOU. The PSI and CG will be developed by the PM within three months after this MOU enters into effect and modified as necessary at the time any amendment to the MOU is signed. They will be reviewed and forwarded to the Participants' DSAs for approval and will be applicable to all Government and Contractor personnel participating in the Project. The CG will be subject to regular review and revision with the aim of downgrading the classification whenever this is appropriate. The PSI and the CG will be approved by the appropriate DSA prior to the transfer of any Classified Information or Controlled Unclassified Information."

11. Revise Section XVIII (Amendment, Entry into Effect, and Duration) by deleting paragraph 18.7. and replacing it with the following:

"18.7. This MOU, which consists of 18 Sections and four Annexes, will come into effect upon signature by both Participants and will remain in effect for fifteen (15) years. It may be extended by written consent of the Participants."

12. Revise Annex A ((Project Management Organization Diagram) by deleting the second page and adding the following new second page:

JPO Participation in the APB Process



** Initial and subsequent functionality and requirements coordination

*** Groups and Teams may stand up and down with APB focus

13. Revise Annex C (Planned Procurement (Order) Quantities and Estimated Funding Schedule) by deleting it and adding the following new Annex C:

"ANNEX C

**PLANNED PROCUREMENT (ORDER) QUANTITIES AND ESTIMATED FUNDING SCHEDULE
AN/BYG-1 UPGRADES**

Table Annex-1: ESTIMATED PROCUREMENT QUANTITIES

	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	TOTAL
USN	6S	6S	3S	11S	11S	11S	7S	14S	11S	7S	12S	11S	7S	14S	11S	142S
RAN		4S				4S			4S				4S			16S
		3L				3L			3L				3L			12L

Note: S = Shipset, L = Lab set

ESTIMATED SHARED FINANCIAL CONTRIBUTION SCHEDULE - DEVELOPMENT PHASE (in million U.S. dollars (\$M))

	FY05	FY06	FY07	FY08	FY09	TOTAL YR1-YR5
USN	15.878	15.378	16.491	19.342	24.472	91.561
RAN	2.802	2.714	2.910	3.413	4.319	16.158

	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	TOTAL YR6-YR15	TOTAL PROGRAM
USN	31.207	30.022	32.272	32.290	33.494	33.627	34.300	35.482	37.265	39.731	339.690	431.251
RAN	5.507	5.298	5.695	5.698	5.911	5.934	6.053	6.262	6.576	7.011	59.945	76.103

ESTIMATED UNIQUE FINANCIAL CONTRIBUTION SCHEDULE - DEVELOPMENT PHASE (\$M)

	FY05	FY06	FY07	FY08	FY09	TOTAL YR1-YR5
USN	27.709	27.932	32.254	30.823	25.890	144.608
RAN	6.488	4.747	8.362	2.625	0.000	22.222

	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	TOTAL YR6-YR15	TOTAL PROGRAM
USN	22.989	24.213	20.060	21.148	20.923	21.977	22.458	22.359	21.594	20.047	217.768	362.376
RAN	14.968	4.292	5.208	7.802	8.245	4.646	5.637	8.446	8.926	11.013	79.183	101.405

ESTIMATED SHARED FINANCIAL CONTRIBUTION SCHEDULE - PRODUCTION PHASE (\$M)

	FY05	FY06	FY07	FY08	FY09	TOTAL YR1-YR5
USN	0.078	0.099	0.108	0.110	0.111	.506
RAN	0.014	0.017	0.019	0.019	0.020	.089

	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	TOTAL YR6-YR15	TOTAL PROGRAM
USN	0.922	1.006	1.026	1.047	1.067	1.089	1.110	1.133	1.156	1.180	10.736	11.242
RAN	0.163	0.178	0.181	0.185	0.189	0.192	0.196	0.199	0.204	0.208	1.895	1.984

ESTIMATED UNIQUE FINANCIAL CONTRIBUTION SCHEDULE - PRODUCTION PHASE (\$M)

	FY05	FY06	FY07	FY08	FY09	TOTAL YR1-YR5
USN	114.800	138.200	99.100	118.000	106.700	576.800
RAN	3.016	5.419	6.567	3.457	3.968	22.427

	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	TOTAL YR6-YR15	TOTAL PROGRAM
USN	109.986	85.341	81.886	69.886	116.875	132.798	119.334	124.133	131.735	142.729	1114.753	1691.553
RAN	7.955	0.000	0.000	25.261	7.050	6.250	0.000	8.289	0.866	0.000	55.671	78.098

ESTIMATED SHARED FINANCIAL CONTRIBUTION SCHEDULE - SUPPORT PHASE (\$M)

	FY05	FY06	FY07	FY08	FY09	TOTAL YR1-YR5
USN	0.078	1.501	4.700	4.868	4.943	16.090
RAN	0.014	0.265	0.829	0.859	0.872	2.839

	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	TOTAL YR6-YR15	TOTAL PROGRAM
USN	1.593	1.627	1.661	1.696	1.731	1.768	1.805	1.843	1.881	1.920	17.525	33.615
RAN	0.281	0.287	0.293	0.299	0.306	0.312	0.318	0.325	0.332	0.340	3.093	5.932

ESTIMATED UNIQUE FINANCIAL CONTRIBUTION SCHEDULE - SUPPORT PHASE (\$M)

	FY05	FY06	FY07	FY08	FY09	TOTAL YR1-YR5
USN	7.926	6.002	3.561	0.749	1.318	19.556
RAN	5.733	5.985	3.765	1.666	2.587	19.736

	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	TOTAL YR6-YR15	TOTAL PROGRAM
USN	4.341	4.657	4.643	4.658	5.591	5.713	5.826	6.099	6.559	7.236	55.323	74.879
RAN	4.578	4.124	4.096	5.222	3.631	2.791	3.387	5.061	3.846	2.922	39.658	59.394

14. Revise Annex D (Project Overview) by deleting it and replacing it with the following new Annex D:

ANNEX D

PROJECT OVERVIEW

1.0. BACKGROUND

1.1 This MOU is built upon a long-term initiative to periodically modernize the AN/BYG-1 under a U.S. DoD/Australian DoD partnership. This project is essential to further strengthen the ability of both Participants to meet current and future undersea and surface threats. The Australian DoD procured AN/BYG-1 baseline systems under the AN/BYG-1 MOU of November 2004 for the COLLINS Class Submarines. This procurement involved the establishment of infrastructure to support the initial and future evolution of the system. The USN, in partnership with the Australian DoD, has established a process for improving, maintaining, and upgrading submarine combat control systems, including the AN/BYG-1 and associated support and training infrastructures.

2.0. PROJECT SUMMARY DESCRIPTION

2.1. The U.S. DoD and the Australian DoD will continue a joint partnership for the cooperative development, production, and through-life support of the AN/BYG-1. The project will consist of three concurrent phases over a fifteen-year period: Development; Production; and Support. The initial baseline establishment, spiral development, and modernization of the AN/BYG-1 resulted in a combat control system with enhanced surveillance, command and control, target detection and localization, and target acquisition capabilities. The cooperative partnership will continue to maximize the mutual benefits of interoperability and the synergy of equipment production and logistics support.

3.0. DEVELOPMENT PHASE

3.1. During Development, U.S. DoD and Australian DoD personnel will jointly develop AN/BYG-1 upgrades through the Advanced Processing Build (APB) Process and specific planned Technical Insertions (TI), including engineering enhancements to software functionality during the production process and other recognized temporary installation processes. Development or testing efforts in support of the Project which may take

place outside of the APB and TI Process or associated working groups identified in this MOU will be strictly conducted so as to not modify or interfere with agreed to configuration baselines, or agreed to ongoing APB efforts, and will be considered unique efforts under this MOU and funded and managed by the respective Participant accordingly.

3.2. The goal of the APB Process (further described in the PMP) is to produce hardware independent software builds that create or improve functionality and incorporate them into naval combat systems. APB improvements provide new technology based on advanced development. To ensure that the most capable functionality is transitioned, the APB Process is open to all eligible members of both Participants' industries who can provide the appropriate technology. The APB Process introduces software enhancements via an evolutionary process designed to promote a balance between innovation and utility while rapidly maturing and transitioning science and technology into operationally useful systems.

3.3. The goal of TIs is to modernize existing system hardware and replace obsolete equipment while providing more processing power to accommodate the greater demands brought about by software changes through the APB Process. Development of the TI will include hardware and software changes that are based on engineering improvements to existing systems and technologies.

3.4. The Development Phase will follow a systems engineering process outlined in the PMP to transition products from the APB Process and Production Enhancements to be acceptable for shipboard use. This includes requirements verification, system level testing, certification, and integrating accepted changes brought about by both the APB Process and TIs into the configurations needed to meet the unique requirements of equipment space on the different submarines classes. Modification of software and hardware products into the necessary configuration to meet the unique requirements of a Participant will be a unique cost of that Participant.

3.5. As AN/BYG-1 is one of the larger systems of SWFTS, hardware selection and the development of AN/BYG-1 software in both the APB process and the production enhancements is closely coordinated among the program offices that comprise SWFTS. The goal of SWFTS and the APB process is to provide coordinated functionality upgrades across systems to maximize the resulting capability across systems. This SWFTS level approach of coordinated upgrades drives the requirement to share technical and interface information across programs. In order to

participate fully in the APB process as partners, each Participant will make its best efforts to provide appropriate interface data and technical data on the systems that interface with AN/BYG-1.

4.0. PRODUCTION PHASE

4.1. The Production phase will consist of procuring and installing hardware upgrades to the AN/BYG-1 Tactical and Weapon Control System on selected submarines and shore based infrastructure of both Participants. These upgrades are coordinated to attain and maintain AN/BYG-1 core commonality between the Participants to the maximum extent possible. To the maximum extent possible, timing of the production and installation of APB and production software upgrades and TI upgrades will consider and take into account the Participants' unique requirements. The Production phase will also include installation of software upgrades developed through the yearly APB process and procurement and installation of hardware from scheduled TIs planned to occur every two years.

5.0. SUPPORT PHASE

5.1. The Joint Project Office will accommodate both Australian DoD and U.S. DoD supply and support plans, schedules, and budgets - full life cycle management, logistic support, and budget planning to the fullest extent possible.

5.2. The Support phase will begin upon MOU signature with the procurement for the Australian DoD of the required support, training, and spares. This will include the provision, support, and future upgrades of shore-based training, testing, development, and integration facilities (including, but not limited to, Submarine Multi-Mission Team Trainer (SMMTT), Multipurpose Interactive Trainer (MIT) and ADCAP post-launch trainer, AN/BYG-1 software build environment) to facilitate the development, testing, and evaluation by both Participants of candidate products for consideration in the APB process, and to deliver training necessary for the operation of the AN/BYG-1 Tactical System. This MOU provides for the reciprocal use of the Participants' training facilities. Certain efforts included in the Support phase derive from the Participants' unique requirements. The financial costs of these unique efforts on the part of both Participants in all phases are estimated in Annex C (Planned Procurement (Order) Quantities and Estimated Funding Schedule). The U.S. DoD and Australian DoD will jointly perform configuration management services, parts

management, safety management, logistics support analysis, updates of technical data, and training during this phase.

SECTION III

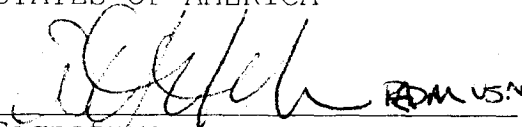
AMENDMENT, TERMINATION, ENTRY INTO EFFECT, AND DURATION

This Amendment One to the AN/BYG-1 MOU will enter into effect upon signature by both Participants. This Amendment will remain in effect for the same period as the MOU that it amends. Unless specifically amended herein, all other provisions of the MOU remain unchanged.

The foregoing represents the understandings reached between the Department of Defense of the United States of America and the Department of Defence of Australia.

Signed, in duplicate, by authorized representatives of the Participants.

FOR THE DEPARTMENT OF
DEFENSE OF THE UNITED
STATES OF AMERICA


Signature


WILLIAM HILAZIDES
Name

PEC SUBMARINES
Title

10/7/09
Date

WASHINGTON DC
Location

FOR THE DEPARTMENT OF
DEFENCE OF AUSTRALIA


Signature

BOYD ROBINSON
Name

HEAD MARITIME SYSTEMS
Title

28 OCT 09
Date

CANBERRA ACT
Location